

IN THE CLAIMS:

Please cancel Claims 2, 3, 7, 8 and 11 to 16 without prejudice or disclaimer of subject matter, amend Claims 1, 4 to 6, 9 and 10, and add new Claims 36 to 39 as shown below. The claims, as pending in the subject application, now read as follows:

1. (Currently amended) A network device ~~connected to a network and~~ having a plurality of controllers connected to a network, comprising:

a plurality of databases disposed in distributed fashion on respective ones of the plurality of controllers and storing management information relating to respective ones of the controllers; and

a plurality of agents distributed on the plurality of controllers,[[;]]

wherein each of the plurality of agents has communication means for ~~communicating with one another~~, means for executing distributed processing of messages issued from a network manager which manages the network, and means for generating responses to these messages,

wherein at least one agent among the plurality of agents functions as a master agent and the other agents function as subagents, and

wherein the master agent comprises:

means for communicating with the network manager using a protocol for exchanging management information between the network manager and the plurality of controllers to separate a message issued from the network manager into a first message including management information to be processed by the master agent and a

second message including management information other than the management information to be processed by a subagent;

response generating means for generating response information with regard to the first message to be responded to the network manager; and
means for notifying subagents of the second message.

2. and 3. (Canceled)

4. (Currently amended) The network device according to claim 1 [[3]], wherein said master agent further includes:

means for receiving response messages sent back from said subagents;

reconstruction means for reconstructing a response message, which is to be sent back to the network manager, from the response messages and the response information that has been generated by said response generating means; and

means for sending the response message, which has been reconstructed by said reconstruction means, back to said network manager.

5. (Currently amended) The network device according to claim 1 [[2]], wherein each subagent includes:

means for separating the second message, which has been received from said master agent, into a third message including containing management information to be processed by the subagent and a fourth message including containing management information other than said management information to be processed by other subagents;

response generating means for generating response information with regard to the third message; and

means for notifying other subagents of the fourth message.

6. (Currently amended) A method of controlling a network device ~~connected to a network~~ and having a plurality of controllers connected to a network, comprising the steps of:

disposing a plurality of databases in distributed fashion on respective ones of the plurality of controllers, said databases storing management information relating to respective ones of the controllers; and

allowing a plurality of agents distributed on the plurality of controllers to communicate ~~with one another~~, thereby executing distributed processing of messages issued from a network manager which manages the network and generating responses to these messages,

wherein at least one agent among the plurality of agents functions as a master agent and the other agents function as subagents, and

wherein the master agent communicates with the network manager using a protocol for exchanging management information between the network manager and the plurality of controllers to separate a message issued from the network manager into a first message including management information to be processed by the master agent and a second message including management information other than the management information to be processed by a subagent;

generates response information with regard to the first message to be responded to the network manager; and
notifies subagents of the second message.

7. and 8. (Canceled)

9. (Currently amended) The method according to claim 6 [[8]], wherein said master agent:

receives response messages sent back from said subagents;
reconstructs a response message, which is to be sent back to the network manager, from the response messages and the response information that has been generated; and
sends the reconstructed response message to said network manager.

10. (Currently amended) The method according to claim 6 [[8]], wherein each subagent:

separates a second message, which has been received from said master agent, into a third message including ~~containing~~ management information to be processed by the subagent and a fourth message including ~~containing~~ management information other than said management information to be processed by another subagent;
generates response information with regard to the third message; and
notifies other subagents of the fourth message.

11. to 16. (Canceled)

17. (Withdrawn) A network controller connected to a peripheral device and to a communication line, comprising:

receiving means for receiving data from a management apparatus via the communication line;

discriminating means for discriminating the data, which has been received by said receiving means, as data to be processed by the network controller and data to be processed by the peripheral device; and

processing means for sending the peripheral device, and causing the peripheral device to process, data that said discriminating means has discriminated as being data to be processed by the peripheral device, and for processing data that said discriminating means has discriminated as being data to be processed by they network controller.

18. (Withdrawn) The network controller according to claim 17, further comprising holding means for holding information relating to the network controller, wherein said processing means processes the data using the information held by said holding means.

19. (Withdrawn) The network controller according to claim 17, further comprising connecting means capable of being connected to a plurality of peripheral devices, wherein said discriminating means discriminates, with regard to each connected peripheral device, data to be transmitted to and processed by said peripheral device.

20. (Currently amended) A peripheral device connected to a communication line via the network controlled set forth in claim 6 [[8]], comprising:

receiving means for receiving data from a management apparatus via said network controller; and

processing means for processing data, which has been received by said receiving means, upon referring to a database holding information relating to said peripheral device.

21. (Withdrawn) A method of controlling a network controller connected to a peripheral device and to a communication line, comprising:

a receiving step of receiving data from a management apparatus via the communication line;

a discriminating step of discriminating the data, which has been received at said receiving step, as data to be processed by the network controller and data to be processed by the peripheral device; and

a processing step of sending the peripheral device, and causing the peripheral device to process, data that said discriminating step has discriminated as being data to be processed by the peripheral device, and for processing data that said

discriminating step has discriminated as being data to be processed by the: network controller.

22. (Withdrawn) The method according to claim 21, further comprising a holding step of holding information relating to the network controller, wherein said processing step processes the data using the information held at said holding step.

23. (Withdrawn) The method according to claim 21, wherein said discriminating step discriminates, with regard to each connected peripheral device, data to be transmitted to and processed by said peripheral device.

24. (Withdrawn) A computer program for implementing control in a network controller connected to a peripheral device and to a communication line, comprising:

a receiving step of receiving data from a management apparatus via the communication line;

a discriminating step of discriminating the data, which has been received at said receiving step, as data to be processed by the network controller and data to be processed by the peripheral device; and

a processing step of sending the peripheral device, and causing the peripheral device to process, data that said discriminating step has discriminated as being data to be processed by the peripheral device, and for processing data that said

discriminating step has discriminated as being data to be processed by the: network controller.

25. (Withdrawn) The computer program according to claim 24, further comprising a holding step of holding information relating to the network controller, wherein said processing step processes the data using the information held at said holding step.

26. (Withdrawn) The computer program according to claim 24, wherein said discriminating step discriminates, with regard to each connected peripheral device, data to be transmitted to and processed by said peripheral device.

27. (Withdrawn) A computer-readable storage medium storing a computer program for implementing control in a network controller connected to a peripheral device and to a communication line, said program comprising:

a receiving step of receiving data from a management apparatus via the communication line;

a discriminating step of discriminating the data, which has been received at said receiving step, as data to be processed by the network controller and data to be processed by the peripheral device; and

a processing step of sending the peripheral device, and causing the peripheral device to process, data that said discriminating step has discriminated as being data to be processed by the peripheral device, and for processing data that said

discriminating step has discriminated as being data to be processed by the network controller.

28. (Withdrawn) The storage medium according to claim 27, wherein said program further comprises a holding step of holding information relating to the network controller, wherein said processing step processes the data using the information held at said holding step.

29. (Withdrawn) The storage medium according to claim 27, wherein said discriminating step discriminates, with regard to each connected peripheral device, data to be transmitted to and processed by said peripheral device.

30. (Withdrawn) A network device connected to a communication line and including a network controller and a peripheral processing unit, said network controller having:

receiving means for receiving data from a management apparatus via the communication line;

discriminating means for discriminating the data, which has been received by said receiving means, as data to be processed by the network controller and data to be processed by the peripheral processing unit; and

first processing means for sending the peripheral processing unit, and causing said peripheral processing unit to process, data that said discriminating means has discriminated as being data to be processed by the peripheral processing unit, and for

processing data that said discriminating means has discriminated as being data to be processed by the network controller; and

said peripheral processing unit has:

receiving means for receiving data that said discriminating means has discriminated as being data to be processed by said peripheral processing unit; and

second processing means for processing data, which has been received by said receiving means, upon referring to a database holding information relating to the peripheral processing unit.

31. (Withdrawn) The network device according to claim 30, further comprising holding means for holding information relating to the network controller per se, wherein said first processing means processes the data using the information held by said holding means.

32. (Withdrawn) The network device according to claim 30, further comprising means capable of being connected to a plurality of peripheral processing units, wherein said discriminating means discriminates, with regard to each connected peripheral processing unit, data to be transmitted to and processed by said peripheral processing unit.

33. (Withdrawn) A device controller externally connected at two ends, comprising:

a database;

means which, if a message received from upstream contains management information corresponding to an entry in said database, is for generating response information by processing the management information in accordance with the message;

means which, if the message contains other management information, is for generating a second message containing this management information and transmitting the second message downstream; and

means for reconstructing a response message by combining the response information with the second message received from downstream, and transmitting the response message upstream.

34. (Withdrawn) A controller method for a device externally connected at two ends, comprising the step of:

if a message received from upstream contains management information corresponding to an entry in a database, generating response information by processing the management information in accordance with the message;

if the message contains other management information, generating a second message containing this management information and transmitting the second message downstream;

reconstructing a response message by combining the response information with the second message received from downstream; and

transmitting the response message upstream.

35. (Withdrawn) A computer program, which uses a database, for implementing by computer:

means which, if a message received from upstream contains management information corresponding to an entry in said database, is for generating response information by processing the management information in accordance with the message;

means which, if the message contains other management information, is for generating a second message containing this management information and transmitting the second message downstream; and

means for reconstructing a response message :by combining the response information with the second message received from downstream, and transmitting the response message upstream.

36. (New) A computer-readable storage medium storing a computer program as defined in Claim 6.

37. (New) A network system having a plurality of controllers connected to a network, comprising:

a plurality of databases disposed in distributed fashion on respective ones of the plurality of controllers and storing management information relating to respective ones of the controllers; and

a plurality of agents distributed on the plurality of controllers,

wherein each of the plurality of agents has communication means, means for executing distributed processing of messages issued from a network manager which manages the network, and means for generating responses to these messages,

wherein at least one agent among the plurality of agents functions as a master agent and the other agents function as subagents, and

wherein the master agent comprises:

means for communicating with the network manager using a protocol for exchanging management information between the network manager and the plurality of controllers to separate a message issued from the network manager into a first message including management information to be processed by the master agent and a second message including management information other than the management information;

a response generating means for generating response information with regard to the first message to be responded to the network manager; and

means for notifying subagents of the second message.

38. (New) The network system according to Claim 37, wherein said master agent further includes:

means for receiving response messages sent back from said subagents;

reconstruction means for reconstructing a response message, which is to be sent back to the network manager, from the response messages and the response information that has been generated by said response generating means; and

means for sending the response message, which has been reconstructed by said reconstruction means, back to said network manager.

39. (New) The network system according to Claim 37, wherein each subagent includes:

means for separating a second message, which has been received from said master agent, into a third message including management information to be processed by the subagent and a fourth message including management information other than said management information to be processed;

response generating means for generating response information with regard to the third message; and

means for notifying other subagents of the fourth message.